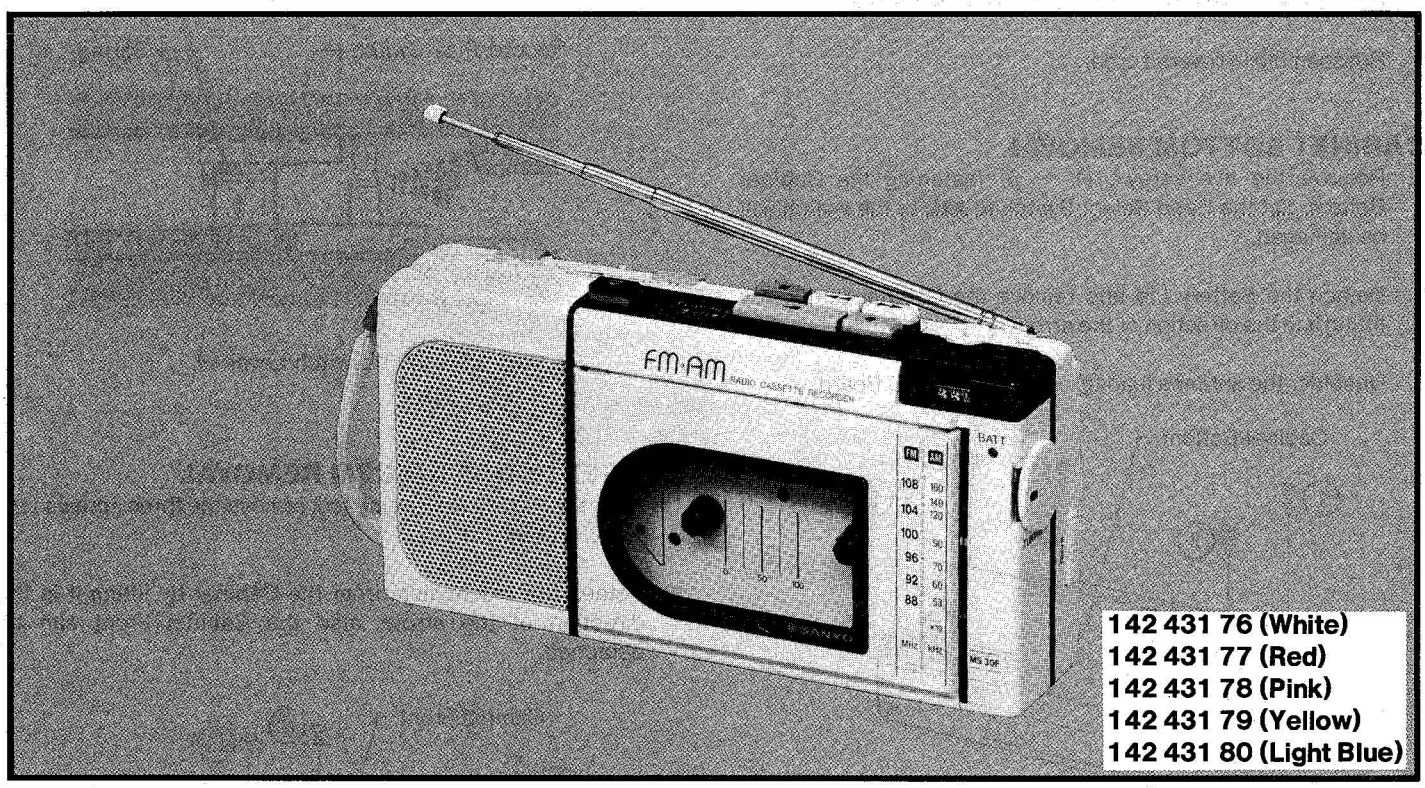
SERVICE MANUAL

SANYO

RADIO CASSETTE RECORDER

MS30F

WEST GERMANY



142 431 76 (White)
142 431 77 (Red)
142 431 78 (Pink)
142 431 79 (Yellow)
142 431 80 (Light Blue)

SPECIFICATIONS

Power Source	
DC	3V
	(UM-3, HP 7, AA Cell, Mignonzellen, R6 x 2)
Output Power	600mW (Max.)
Current Consumption (at Vol. min.)	
Record mode	120mA
Playback mode	120mA
Fast Forward mode	160mA
Rewind mode	160mA
Recording System	DC Bias
Erasing System	Magnet Erasing
Tape Speed	1-7/8ips. ±3%
Fast:	+30%
Slow:	−10%
Fast Forward Time	120 sec. (with C-60)
Rewind Time	120 sec. (with C-60)
Wow & Flutter	0.4%/WRMS
Frequency Response (Overall)	250 ~ 6,300Hz
Torque	
Playback	25 ~ 45g-cm
Fast Forward/Rewind	60 ~ 120g-cm
Erase Ratio (Overall)	more than 40dB
Signal to Noise Ratio	more than 30dB
Harmonic Distortion (K3)	less than 13%
Hum & Noise (At Vol. min.)	less than −65dBs
Crosstalk	
Track to Track	more than 60dB
Terminal Impedance	
MIC	3.3kΩ
Earphone	8Ω
Frequency Range	
AM	525 ~ 1,605kHz
FM	87.5 ~ 108MHz
Dimensions	179(W) x 88(H) x 44(D)mm
Weight (without batteries)	430g

–Specifications subject to change without notice.–

REFERENCE No. WM-19994

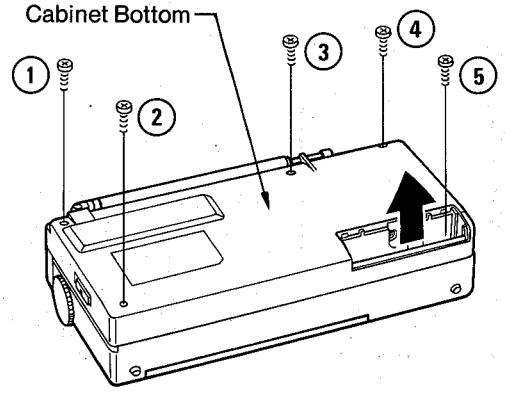
DISASSEMBLY INSTRUCTIONS

GENERAL REMARKS

- Before disassembling the unit, spread a soft rubber mat or a cloth on the workbench to avoid scratches and grease stains.
- Do not spread anything which is likely to cause static electricity because transistors and ICs may be easily damaged by it.
- Reassemble the unit, noting the kinds of screws and the soldering and arrangement of the leads. Refer to "Circuit Diagram and Exploded Views" for correct assembly.
- Reassemble in reverse order.

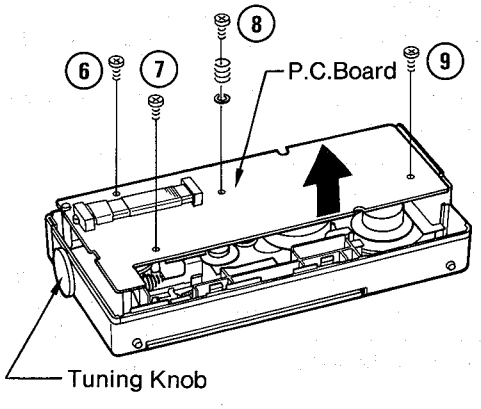
CABINET BOTTOM REMOVAL

1. Remove the five screws (1 ~ 5) fastening the Cabinet Bottom. Set the Band Select Switch to **AM**, or the switch will be damaged.
2. Detach the Battery Lid and remove the Cabinet Bottom by lifting it in the direction of the arrow.
3. Unsolder the antenna lead (green) from the P.C.Board.



P.C.BOARD REMOVAL

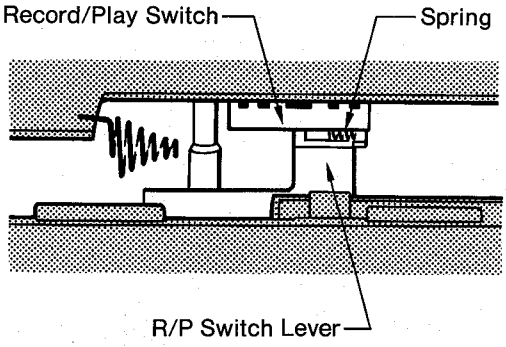
1. Remove the Cabinet Bottom and pull the Tuning Knob off the unit. Then unsolder the follows leads from the P.C.Board.
   - Speaker leads: blue and white
   - Motor leads: blue, red and gray
   - Battery lead (positive side): red



2. Remove the four screws (6 ~ 9) fastening the P.C.Board and remove the P.C.Board in the direction of the arrow with caution not to damage the built-in microphone and LED Indicator leads.

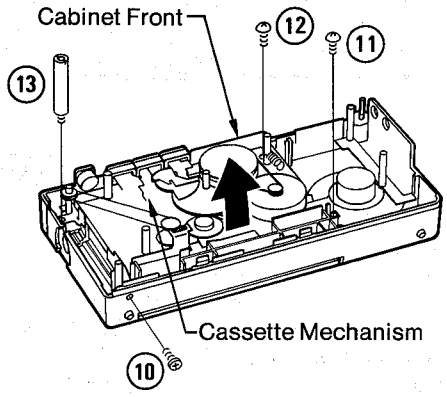
NOTE:

- When the removed lead wires are resoldered, refer to the Wiring Diagram to avoid miswiring.
- When the P.C.Board is reassembled, the Record/Play Switch should be attached to the R/P Switch Lever correctly as illustrated.



CASSETTE MECHANISM REMOVAL

1. After the P.C.Board is removed, remove the three screws (10 ~ 12) and the post (13).
2. Detach the Mechanism from the Cabinet by lifting it in the direction of the arrow, also the Cabinet Front can be detached.



ADJUSTMENT PROCEDURES

GENERAL REMARKS

- Before the adjustments, wipe off stains on the tape contacting surfaces of the parts and the belt with a soft cloth soaked in alcohol. Trouble may occur because of oil and grease stains. Carefully handle the belt because grease easily attaches to it.
- Carefully handle the belt because grease easily attaches to it. Then check the used rubber parts. If the rubber has deteriorated or is scratched, replace the parts with new one.

REQUIRED EQUIPMENT

- VTVM
- Frequency Counter
- DC Constant-voltage Regulator
- Dummy Load (16Ω)
- Test Tapes
  - ‡ 3kHz Test Tape (Example: TEAC MTT-111)
  - ‡ 8kHz Test Tape (Example: TEAC MTT-113C)
- Alignment Tool

NOTE:
Before performing the adjustment, set the control and switch as follows:

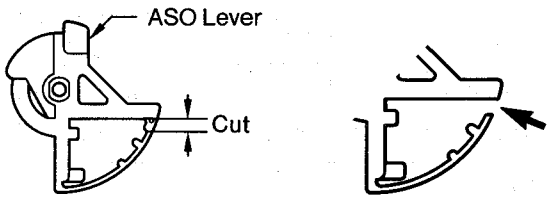
- ‡ Function Switch ..... TAPE
- ‡ Speed Control Switch ..... NORMAL position
- ‡ Volume Control ..... As desired
- ‡ Supply a regulated DC 3.0V power to the Ext. Power Jack.

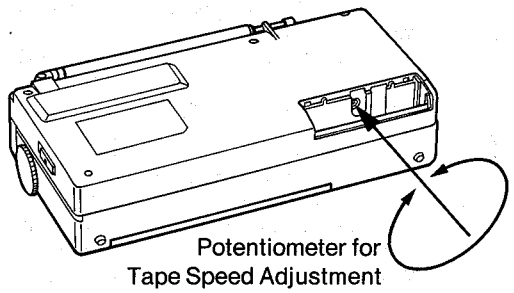
■ ADJUSTMENT PROCEDURE

Adjustment Item	Connection	Dummy Load	Measuring Instrument	Test Tape	Adjustment	Measuring Value
Tape Speed	Earphone	16Ω	Frequency Counter	TEAC MTT-111	P501	3,000Hz ±3%
Head Azimuth			VTVM	TEAC MTT-113C	Azimuth Screw	Maximum

ASO LEVER

The service part of the ASO Lever is not cut to avoid deforming as illustrated.
When replacing the ASO Lever, cut the part indicated in the illustration.





TUNER ADJUSTMENT

EQUIPMENT REQUIRED

- AM Standard Signal Generator
- FM Standard Signal Generator
- Generator Scope
- Loop Antenna
- Ceramic Capacitor (1000pF) for FM IF Alignment
- Dummy Antenna (75Ω, unbalanced type) for FM
- Oscilloscope

NOTE:

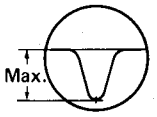
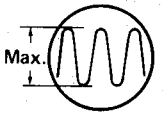
- Use an alignment tool with plastic grip for all adjustments.
- Supply a regulated DC 3V power to the Ext Power Jack.

- VTVM
- Dummy Load (16Ω)
- Alignment Tool
- Before performing the adjustment, set the switches and control as follows:
  - ‡ Function Switch ..... RADIO
  - ‡ Band Select Switch ..... AM or FM
  - ‡ Volume Control ..... As desired

TUNER ADJUSTMENT (Continued)

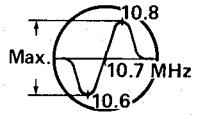
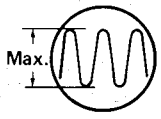
AM ALIGNMENT

Standard Test Frequency 400Hz and Modulation 30% at AM

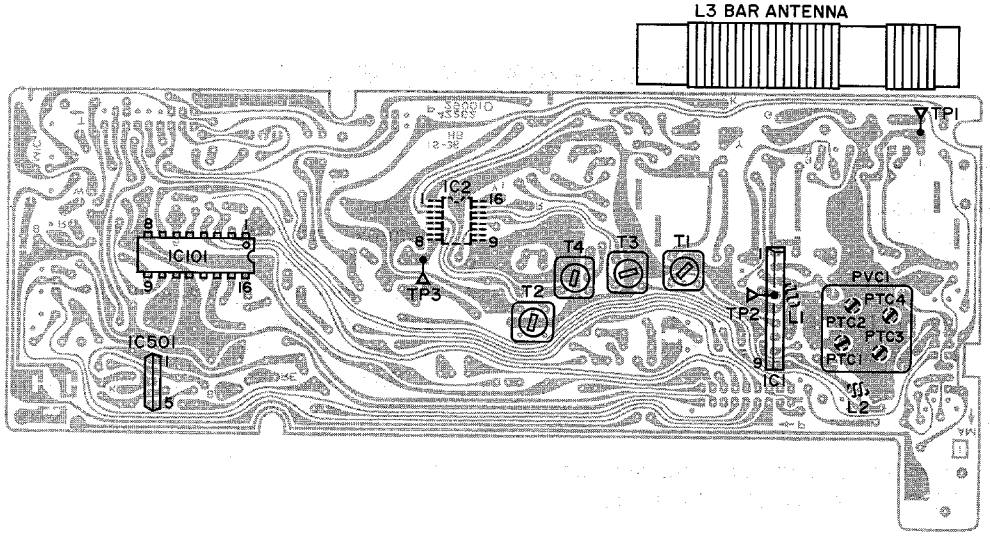
Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF for AM	Connect loop antenna to output terminal of gene-scope. Place loop antenna 60cm away from bar antenna.	Connect input terminal of gene-scope to Pin 9 of IC2 (TP3).	460kHz	Low End	T4	Obtain symmetrical curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect loop antenna to output terminal of AM signal generator. Place loop antenna 60cm away from bar antenna.	Connect VTVM with 16Ω dummy load and oscilloscope to earphone jack.	510kHz		T3	Obtain sine-wave of 400Hz and maximum amplitude. 
3				1,670kHz	High End	PTC3 (PVC)	
4	Adjustment of Tracking			600kHz	600kHz	L3 (bar ant. coil)	
5				1,400kHz	1,400kHz	PTC4 (PVC)	
6	Repeat the above steps until no further change is noted in any of the adjustments.						

FM ALIGNMENT

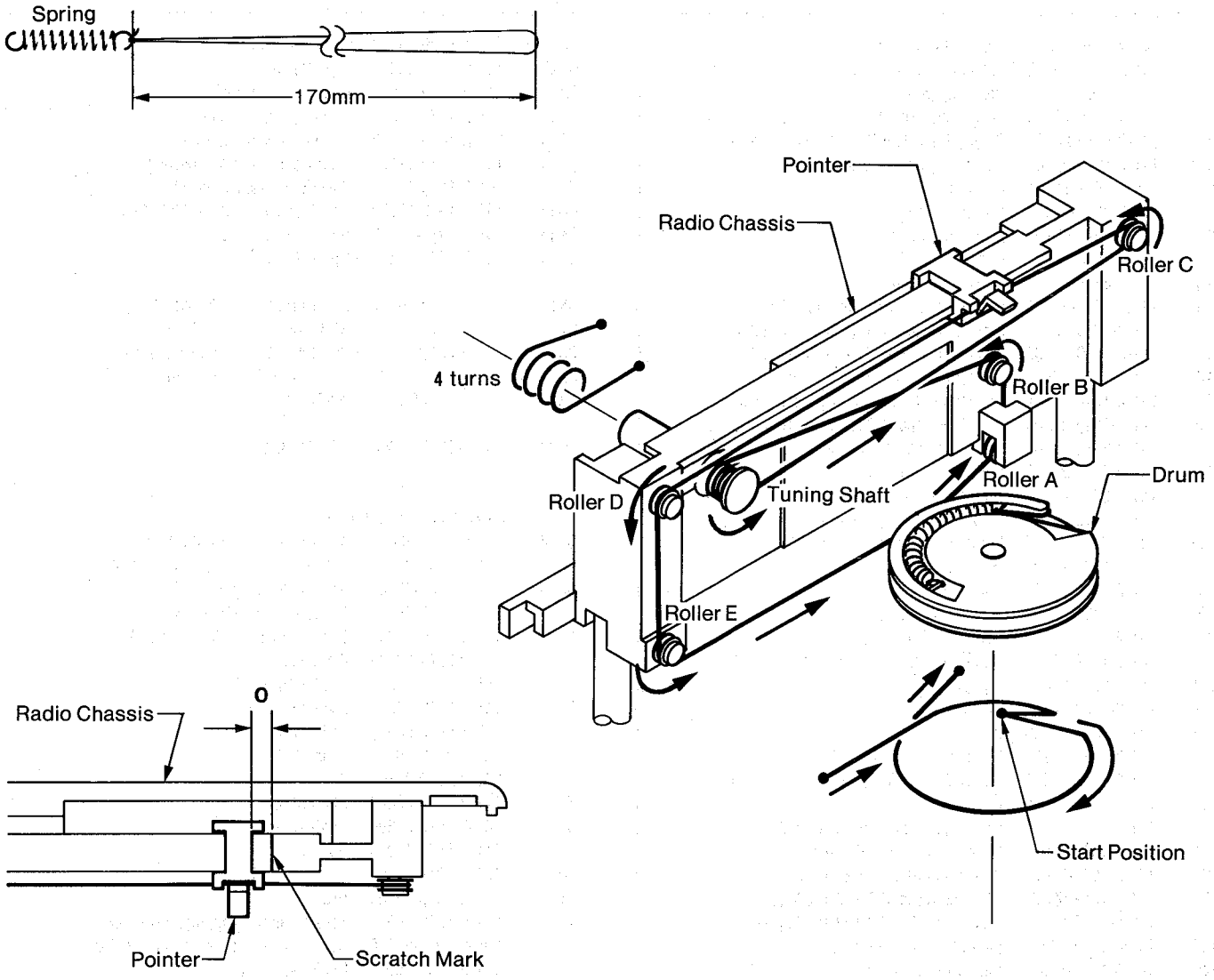
Standard test frequency 400Hz and deviation 22.5kHz

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Connect output Terminal of gene-scope to Pin 1 of IC1 (TP2) through ceramic capacitor (1000pF).	Connect input terminal of gene-scope to Pin 9 of IC2 (TP3).	10.7MHz	Low End	T1 and T2	Obtain **S** curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect FM signal generator to antenna terminals (TP1) through dummy antenna (75Ω, unbalanced type).	Connect VTVM with 16Ω dummy load and oscilloscope to earphone jack.	87.35MHz		L2	Obtain sine-curve and maximum amplitude. 
3				108.25MHz	High End	PTC1 (PVC)	
4	Adjustment of Tracking			90MHz	90MHz	L1	
5				106MHz	106MHz	PTC2 (PVC)	
6	Repeat the above steps until no further change is noted in any of the adjustments.						

ALIGNMENT POINTS



DIAL CORD STRINGING



PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141-6-1419-94000	Individual Carton	1
	141-6-1469-17700	Case Styrofoam	1
	141-6-2519-25190	Poly Cover	1
	141-6-3919-53500	Plain Pad	1
	141-6-4559-03300	Serial No. Sheet	3
	141-6-4559-03952	Label Color W (White)	1
	141-6-4559-03954	Label Color R (Red)	1
	141-6-4559-03956	Label Color Y (Yellow)	1
	141-6-4559-03969	Label Color P (Pink)	1
	141-6-4559-03953	Label Color LB (Light Blue)	1
	ACCESSORIES		
	4-2419-70982	Cassette	1
	142-6-4119-33514	Instruction Manual	1

Ref. No.	Part No.	Description	Q'ty
	CABINET		
CA1	141-0-1249-42508	Lid Cassette Assy (White)	1
CA1	141-0-1249-42509	Lid Cassette Assy (Red)	1
CA1	141-0-1249-42512	Lid Cassette Assy (Pink)	1
CA1	141-0-1249-42511	Lid Cassette Assy (Yellow)	1
CA1	141-0-1249-42513	Lid Cassette Assy (Light Blue)	1
CA2	141-2-8549-17202	Spring Eject	1
CA3	141-0-1129-26404	Cabinet Top Compl (White)	1
CA3	141-0-1129-26405	Cabinet Top Compl (Red)	1
CA3	141-0-1129-26408	Cabinet Top Compl (Pink)	1
CA3	141-0-1129-26407	Cabinet Top Compl (Yellow)	1
CA3	141-0-1129-26409	Cabinet Top Compl (Light Blue)	1
CA4	141-2-1639-65000	Knob Tuning (White)	1
CA4	141-2-1639-65002	Knob Tuning (Red)	1
CA4	141-2-1639-65001	Knob Tuning (Pink)	1
CA4	141-2-1639-65004	Knob Tuning (Yellow)	1
CA4	141-2-1639-65005	Knob Tuning (Light Blue)	1

PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
CA5	141-2-1129-46502	Cabinet Front (W/R)	1
CA5	141-2-1129-46503	Cabinet Front (P/Y/LB)	1
CA6	141-2-3899-11501	Holder Microphone	1
CA7	4-1539-70620	Microphone [BM1]	1
CA8	141-2-4219-28400	Screw, Pan Hd., +M1.4x2.5 (W/P/Y/LB)	1
CA8	141-2-4219-28401	Screw, Pan Hd., +M1.4x2.5 (R)	1
CA9	141-2-8419-15400	Interlock Lever	1
CA10	141-2-3519-74600	Holder Interlock	1
CA11	141-2-8519-69100	Spring Shut Off	1
CA12	4-1519-71421	Speaker [SP1/8Ω]	1
CA13	141-2-3729-03201	Bracket Speaker	2
CA14	141-2-4219-27201	Screw, Pan Hd. Tapping, +M1.7x5.0	5
CA15	141-2-1649-47800	Knob Band Speed (Tape Speed) (White)	1
CA15	141-2-1649-47802	Knob Band Speed (Tape Speed) (Red)	1
CA15	141-2-1649-47801	Knob Band Speed (Tape Speed) (Pink)	1
CA15	141-2-1649-47804	Knob Band Speed (Tape Speed) (Yellow)	1
CA15	141-2-1649-47805	Knob Band Speed (Tape Speed) (Light Blue)	1
CA16	141-2-2719-20900	Holder Hand Strap (White)	1
CA16	141-2-2719-20902	Holder Hand Strap (Red)	1
CA16	141-2-2719-20901	Holder Hand Strap (Pink)	1
CA16	141-2-2719-20904	Holder Hand Strap (Yellow)	1
CA16	141-2-2719-20905	Holder Hand Strap (Light Blue)	1
CA17	141-2-1769-11102	Hand Strap (White)	1
CA17	141-2-1769-11101	Hand Strap (Red)	1
CA17	141-2-1769-11103	Hand Strap (Pink)	1
CA17	141-2-1769-11104	Hand Strap (Yellow)	1
CA17	141-2-1769-11105	Hand Strap (Light Blue)	1
CA18	141-2-2719-21000	Shaft Handle	1
CA19	141-2-4469-14502	Cushion	8
CA20	141-2-4359-46800	Sheet	1
CA21	141-0-2149-03900	Bracket Cabinet Assy	1
CA22	141-2-4219-30002	Screw, Pan Hd. Tapping-B, +M2.0x10.0	2
CA23	141-2-7539-81500	Post	1
CA24	141-2-1649-50600	Knob Band (Band Select) (White)	1
CA24	141-2-1649-50601	Knob Band (Band Select) (Red)	1
CA24	141-2-1649-50604	Knob Band (Band Select) (Pink)	1
CA24	141-2-1649-50603	Knob Band (Band Select) (Yellow)	1
CA24	141-2-1649-50605	Knob Band (Band Select) (Light Blue)	1
CA25	141-0-1339-14300	Lid Battery Assy (White)	1
CA25	141-0-1339-14302	Lid Battery Assy (Red)	1
CA25	141-0-1339-14301	Lid Battery Assy (Pink)	1
CA25	141-0-1339-14304	Lid Battery Assy (Yellow)	1
CA25	141-0-1339-14305	Lid Battery Assy (Light Blue)	1
CA26	141-0-1129-23221	Cabinet Bottom Assy (White)	1
CA26	141-0-1129-23222	Cabinet Bottom Assy (Red)	1
CA26	141-0-1129-23223	Cabinet Bottom Assy (Pink)	1
CA26	141-0-1129-23224	Cabinet Bottom Assy (Yellow)	1
CA26	141-0-1129-23225	Cabinet Bottom Assy (Light Blue)	1
CA27	141-2-1649-47100	Knob Select GR (Function)	1
CA28	141-2-1649-47101	Knob Select PK (Pause)	1
CA29	4-2449-70670	Rod Antenna (W/P/Y/LB)	1
CA29	4-2449-70671	Rod Antenna (Red)	1
CA30	141-2-4729-07000	Lug	1
CA31	141-2-4219-03001	Screw, +M2.0x3.0 (W/P/Y/LB)	1
CA31	141-2-4219-03002	Screw, +M2.0x3.0 (R)	1
CA32	141-2-2419-36700	Sheet	1
CA33	141-2-4219-15400	Screw, +M1.7x2.0	2
CA34	141-0-2149-04000	Bracket Assy	1
CA35	141-2-2149-29700	Bracket Chassis	1
CA36	141-2-4219-15401	Screw, +M1.7x2.0	2
CA37	141-2-7439-54600	Arm Eject	1
CA38	141-2-3529-52500	Spacer	3
CA39	141-2-4219-28200	Screw, Pan Hd.-1, +M1.7x2.5	3
CA40	141-2-8549-37700	Spring	1
CA41	141-0-7319-35200	Lever Eject Assy	1
CA42	141-2-4219-23500	Screw, +M1.7x4.0	1
CA43	141-2-1639-64900	Knob Volume (White)	1
CA43	141-2-1639-64902	Knob Volume (Red)	1
CA43	141-2-1639-64901	Knob Volume (Pink)	1
CA43	141-2-1639-64904	Knob Volume (Yellow)	1
CA43	141-2-1639-64905	Knob Volume (Light Blue)	1
CA44	141-0-1939-17186	AMP/Radio Assy (White/Red)	1
CA44	141-0-1939-17188	AMP/Radio Assy (Yellow)	1
CA44	141-0-1939-17189	AMP/Radio Assy (Pink/Light Blue)	1
CA45	141-2-4219-10600	Screw, +M1.7x3.0	4
CA46	141-2-8559-16400	Spring Earth	1
CX1	411 019 9807	SCR PAN PCS 1.7X3 (W/P/Y/LB)	1
CX1	411 099 0701	SCR PAN PCS 1.7X3 (Red)	1
CX2	411 020 1906	SCR PAN PCS 1.7X6 (W/P/Y/LB)	4
CX2	411 020 2101	SCR PAN PCS 1.7X6 (Red)	4
CX3	411 086 1407	WASHER SPR 1.7	1
PCB2	141-0-1939-19390	LED P.C.B. Assy	1

AMP/RADIO ASSY

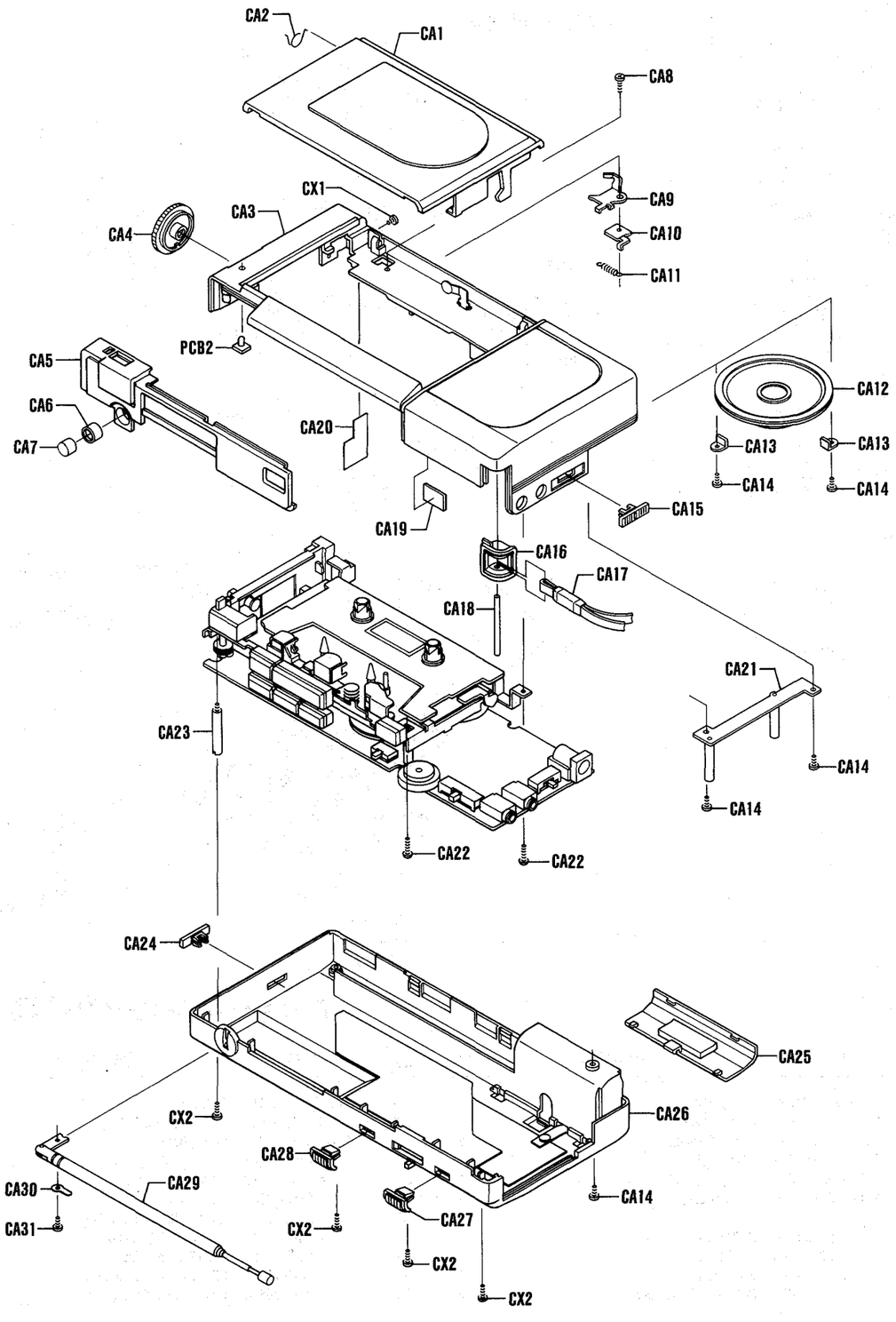
CA44	141-0-1939-20841	AMP/Radio Assy (White/Red)	1
CA44	141-0-1939-20842	AMP/Radio Assy (Pink/Light Blue)	1
CA44	141-0-1939-20843	AMP/Radio Assy (Yellow)	1
1	141-2-3119-29300	Chassis Radio (White/Red)	1
1	141-2-3119-29301	Chassis Radio (Pink/Light Blue)	1
2	411 016 0203	RING E 2.5	1
3	141-2-5119-14600	Pointer (W/R/P/LB)	1
3	141-2-5119-14603	Pointer (Yellow)	1
4	625-3-0906-00000	String ϕ0.3	1
5	141-2-8259-10800	Roller Dial	5
6	141-2-7519-81700	Pin	4
7	141-2-7519-63400	Shaft Roller	1
8	141-2-7519-81800	Shaft Tuning	1
9	141-2-8549-14200	Spring	1
10	141-2-4219-08900	Screw, +M1.7x3.0	1
11	141-2-5389-06400	Drum	1
12	141-2-4219-18500	Screw, Pan Hd. Tapping, +M1.7x4.0	2
13	141-2-4219-27200	Screw, Pan Hd. Tapping, +M1.7x5.0	2
14	141-2-3849-05900	Holder Antenna	2
15	141-2-4469-27601	Cushion	4
16	4-2579-72490	Bar Antenna [L3]	1
17	141-2-4469-14502	Cushion	1
PCB1	141-0-1939-20831	AMP/Radio P.C.B. Assy	1

W: White
R: Red
P: Pink
Y: Yellow
LB: Light Blue

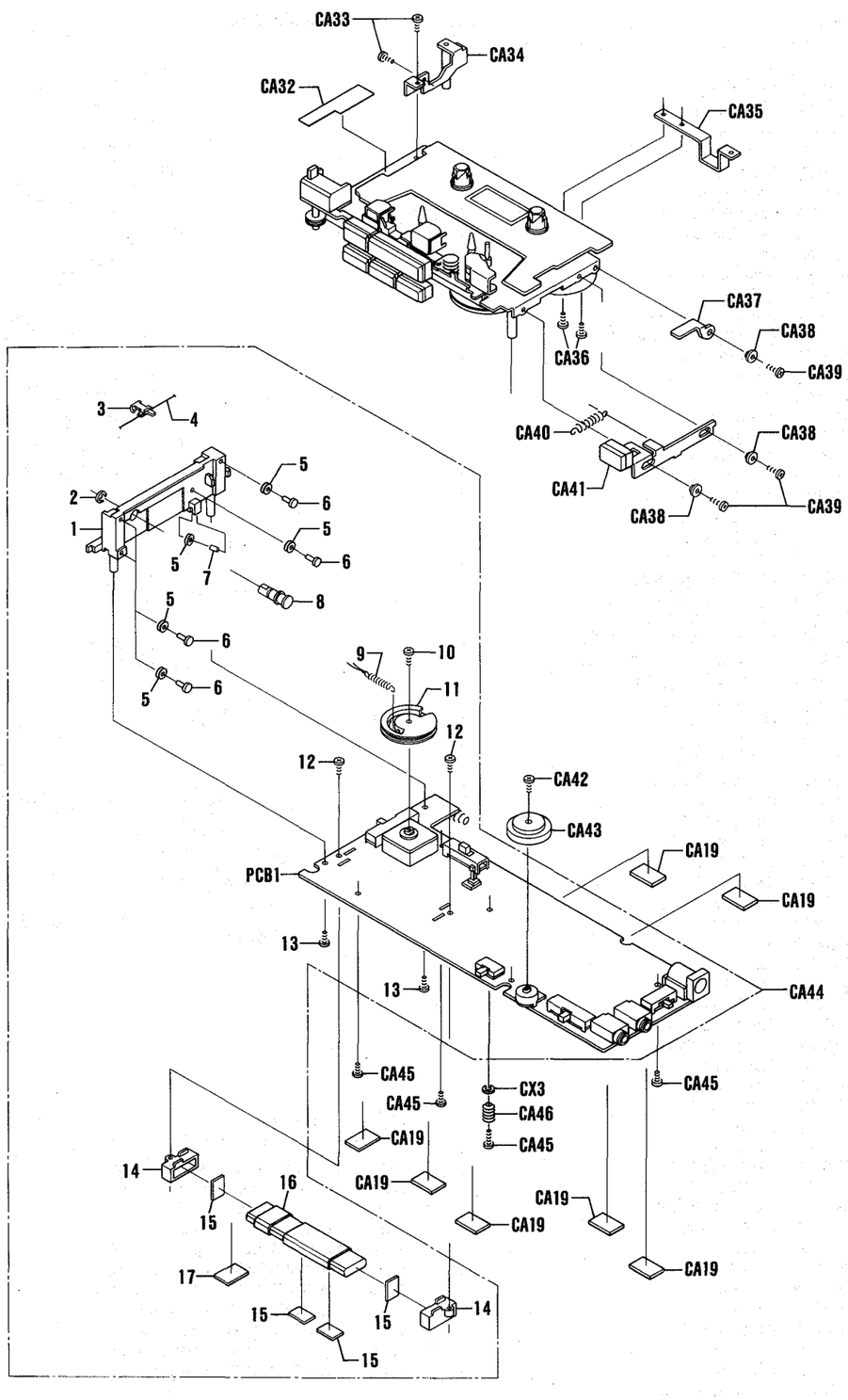
NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CABINET EXPLODED VIEW



CABINET EXPLODED VIEW (Continued)

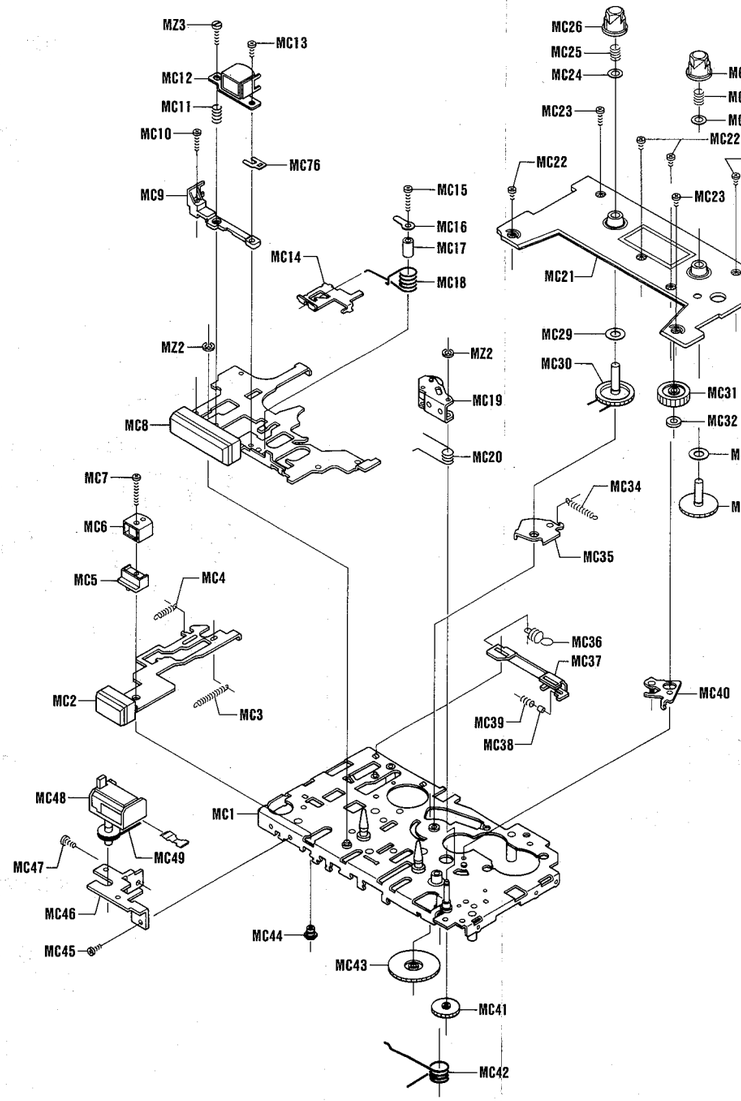


MECHANISM PARTS LIST

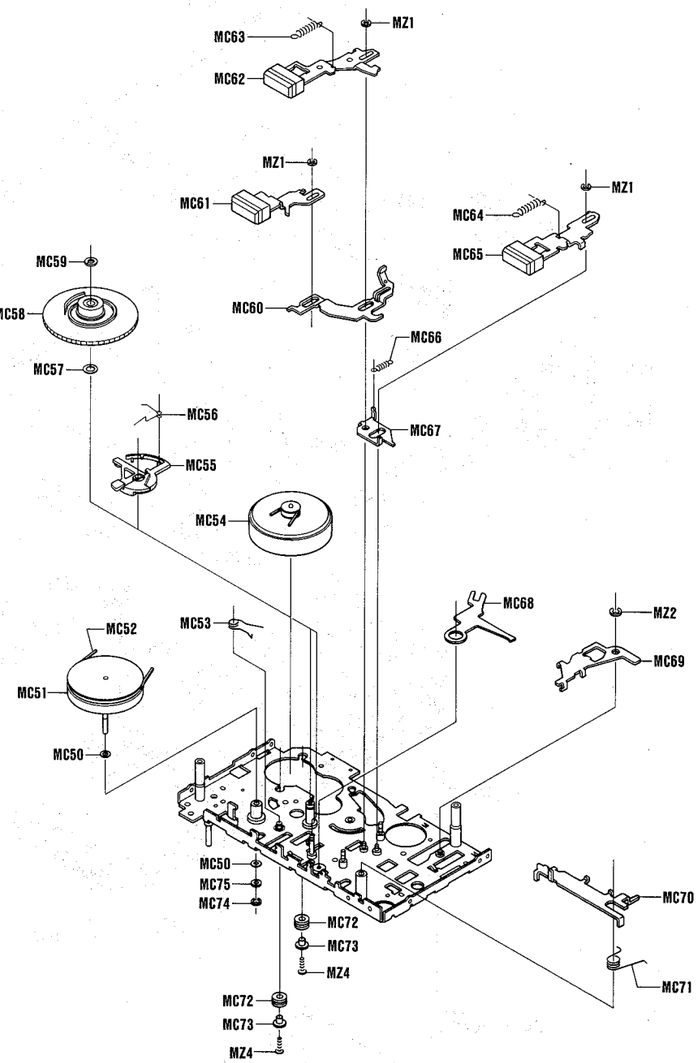
Ref. No.	Part No.	Description	Q'ty
	CASSETTE MECHANISM		
MC1	141-0-3119-25203	Chassis Assy	1
MC2	141-0-7319-31603	Rod Record Assy	1
MC3	141-2-8549-29400	Spring Lever Lock R	1
MC4	141-2-8549-29200	Spring Rod Record	1
MC5	141-2-3529-45900	Spacer E Head	1
MC6	4-2429-71241	Erase Head [HD2]	1
MC7	141-2-4219-06602	Screw, +M2.0x11.0	1
MC8	141-0-7319-31203	Base Slide Assy	1
MC9	141-2-3529-45800	Speacer Head	1
MC10	141-2-4219-04000	Screw, +M2.0x6.0	1
MC11	141-2-8549-32300	Spring Head	1
MC12	4-2429-72463	Record/Play Head [HD1]	1
MC13	141-2-4219-02905	Screw, Pan Hd., +M2.0x4.0	1
MC14	141-2-7319-64700	Plate Slide Base	1
MC15	141-2-4219-03600	Screw, +M2.0x3.0	1
MC16	141-2-4729-01902	Lug	1
MC17	141-2-7539-66000	Post SPG Base	1
MC18	141-2-8529-24600	Spring Base Slide	1
MC19	141-0-5459-02302	Arm Pinchrol Assy	1
MC20	141-2-8529-24700	Spring Arm Pinchrol	1
MC21	141-2-3119-23203	Cover Chassis (White)	1
MC21	141-2-3119-23207	Cover Chassis (Red)	1
MC21	141-2-3119-23208	Cover Chassis (Yellow)	1
MC21	141-2-3119-23205	Cover Chassis (Pink)	1
MC21	141-2-3119-23209	Cover Chassis (Light Blue)	1
MC22	141-2-4219-10803	Screw, +M2.0x2.5 (W/P/Y/LB)	4
MC22	141-2-4219-10802	Screw, +M2.0x2.5 (Red)	4
MC23	141-2-4219-02904	Screw, Pan Hd., +M2.0x4.0 (W/P/Y/LB)	2
MC23	141-2-4219-02903	Screw, Pan Hd., +M2.0x4.0 (Red)	2
MC24	141-2-4539-37800	Washer, M3.1x5.0x0.13	2
MC25	141-2-8559-11601	Spring Back Tension	1
MC26	141-2-5319-16500	Fin Reel Supply	1
MC27	141-2-5319-16300	Fin Reel Take-up	1
MC28	141-2-8559-11600	Spring Back Tension	1
MC29	141-2-4539-41000	Washer, M3.3x6.0x0.13	2
MC30	141-0-5319-09900	Gear Reel Assy	1
MC31	141-2-5519-61100	Gear Fastwind	1
MC32	141-2-5369-08200	Mold Ring	1
MC33	141-2-5319-16200	Gear Reel Take-up	1
MC34	141-2-8549-31200	Spring Arm Fastwind	1
MC35	141-0-7439-18100	Arm Fastwind Assy	1
MC36	141-2-8549-28600	Spring Rod RP Switch	1
MC37	141-2-7319-79700	Rod RP Switch	1
MC38	141-2-4619-08600	Tube	1
MC39	141-2-8559-10700	Spring RP Switch	1
MC40	141-0-7439-18000	Arm Take-up Assy	1
MC41	141-2-5519-60900	Gear Take-up	1
MC42	141-2-8529-24500	Spring PL SL Base	1
MC43	141-2-5519-61000	Gear Rewind	1
MC44	141-2-7539-64500	Pin Rod Record	1
MC45	141-2-4219-09002	Screw, +M2.0x2.0	1
MC46	141-2-8139-13200	Bracket Counter	1
MC47	141-2-4219-15401	Screw, +M1.7x2.0	1
MC48	141-2-8119-06005	Counter with Spring	1
MC49	141-2-5649-29800	Belt Counter	1
MC50	141-2-4539-27601	Washer, M2.1x3.5x0.13	2
MC51	141-0-5219-11700	Flywheel Compl	1
MC52	141-2-5649-28000	Belt Drive	1
MC53	141-2-8529-24900	Spring Rod Stop	1
MC54	4-5279-71554	Motor [M1]	1
MC55	141-2-7419-95200	Lever ASO	1
MC56	141-2-8529-25000	Spring Lever ASO	1
MC57	141-2-4539-19502	Washer, M3.55x5.5x0.25	1
MC58	141-0-5519-11600	Friction Assy	1
MC59	141-2-4539-38200	Washer, M2.6x4.7x0.4	1

MECHANISM EXPLODED VIEW

(Chassis Top)



(Chassis Bottom)



Ref. No.	Part No.	Description	Q'ty
MC60	141-2-7319-65300	Rod Switch Leaf	1
MC61	141-0-7319-31503	Rod Stop Assy	1
MC62	141-0-7319-31403	Rod Fast Assy	1
MC63	141-2-8549-28700	Spring Rod FF	1
MC64	141-2-8549-28800	Spring Rod REW	1
MC65	141-0-7319-31303	Rod Rewind Assy	1
MC66	141-2-8549-29300	Spring Rod SW Leaf	1
MC67	141-2-7419-95100	Lever Cue Review	1
MC68	141-2-7419-95000	Lever Rewind	1
MC69	141-2-7419-94900	Lever Lock Record	1
MC70	141-2-7319-65200	Plate Lock	1

Ref. No.	Part No.	Description	Q'ty
MC71	141-2-8529-24800	Spring Plate Lock	1
MC72	141-2-4459-24900	Cushion Motor	2
MC73	141-2-3529-51300	Spacer Cushion Motor	2
MC74	141-2-4579-04400	E Ring, M1.52	1
MC75	141-2-4539-27603	Washer, M2.1x3.5x0.25	1
MC76	141-2-3529-18100	Spacer Head	1
MZ1	411 015 6800	RING E 1.2	4
MZ2	411 015 7609	RING E 1.5	3
MZ3	411 035 7207	SCR CYL 2X7	1
MZ4	411 017 4606	SCR FLT PCS 1.7X3.5	2

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	AMPLIFIER P.C.B. ASSY		
PCB1	141-0-1939-20831	AMP/Radio P.C.B. Assy	1
	141-2-3829-46600	Spring Battery	1
J1	4-2359-75472	1P Jack (Microphone)	1
J2	4-2359-75472	1P Jack (Earphone)	1
J3	4-2359-72954	Ext. Power Jack	1
S1	4-2319-73645	Slide Switch (Record/Play)	1
S2	4-2319-79440	Slide Switch (Function)	1
S3	4-2319-79450	Slide Switch (Pause)	1
S4	4-2319-79270	Slide Switch (Speed Select)	1
S5	4-2319-78840	Slide Switch (Band Select)	1

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
S6	4-2319-76160	Leaf Switch (Power)	1
BPF1	4-2539-71021	Band Pass Filter	1
L1	4-2599-70864	RF Coil	1
L2	4-2589-72891	OSC Coil FM	1
L501	4-2539-70740	Choke Coil	1
L502	4-2539-70271	Choke Coil	1
L503	4-2539-70271	Choke Coil	1
T1	4-2569-72190	IFT TV Top	1
T2	4-2569-72170	IFT FM	1
T3	4-2589-73420	MW OSC Trans	1
T4	4-2569-72162	IFT AM	1
CF1	4-2539-70184	Ceramic Filter	1
CF2	4-2539-72141	Ceramic Filter 460K	1
PVC1	4-2249-71230	Variable Condenser	1
P501	4-2229-76851	Potentiometer (B-5kΩ)	1
VR1	4-2229-75730	Volume Control (A-20kΩ)	1
D1	407 061 2200	DIODE 1SS254-TA	1
D101	407 007 9904	DIODE GMA01-BT	1
D102	407 061 2804	DIODE 2-0A90-A	1
IC1	409 049 2103	IC TA7358P	1
IC2	409 071 6803	IC TA7787F	1
IC101	409 017 5204	IC LA4162	1
IC501	409 018 2103	IC LA5521S	1
Q1	405 016 5801	TR 2SC2999-E	1
C1	403 010 5803	CERAMIC 12P J 50V	1
C2	403 001 5102	CERAMIC 2200P M 16V	1
C3	403 026 9406	CERAMIC 5P C 50V	1
C4	403 019 0502	CERAMIC 24P J 50V	1
C5	403 009 1809	CERAMIC 10P J 50V	1
C6	403 069 1207	CERAMIC 1000P K 50V	1
C7	403 019 5705	CERAMIC 25P J 50V	1
C8	403 001 1203	CERAMIC 0.022U N 6V	1
C9	403 008 5204	CERAMIC 10P D 50V	1
C10	403 001 5102	CERAMIC 2200P M 16V	1
C11	403 069 1207	CERAMIC 1000P K 50V	1
C12	403 001 2309	CERAMIC 0.01U N 16V	1
C13	403 069 1207	CERAMIC 1000P K 50V	1
C14	403 001 2309	CERAMIC 0.01U N 16V	1
C15	403 003 3700	CERAMIC 0.022U Z 25V	1
C16	403 003 3700	CERAMIC 0.022U Z 25V	1
C17	403 001 1203	CERAMIC 0.022U N 6V	1
C18	403 047 1809	ELECT 4.7U M 25V	1
C19	403 001 1203	CERAMIC 0.022U N 6V	1
C20	403 040 4807	ELECT 220U M 10V	1
C21	403 047 9805	ELECT 0.1U M 50V	1
C22	403 001 2309	CERAMIC 0.01U N 16V	1
C23	403 024 9606	CERAMIC 4P C 50V	1
C24	403 069 0705	CERAMIC 1000P K 50V	1
C25	403 001 7601	CERAMIC 4700P M 16V	1
C26	403 020 8108	CERAMIC 3P C 50V	1
C101	403 060 8106	POLYESTER 0.033U J 50V	1
C102	403 090 9203	TA-SOLID 0.068U M 16V	1
C103	403 039 2906	ELECT 47U M 6.3V	1
C104	403 069 1207	CERAMIC 1000P K 50V	1
C105	403 042 0807	ELECT 10U M 16V	1
C106	403 049 1609	ELECT 1U M 50V	1
C107	403 049 1609	ELECT 1U M 50V	1
C108	403 069 1207	CERAMIC 1000P K 50V	1
C109	403 049 2002	ELECT 1U M 50V	1
C110	403 039 2906	ELECT 47U M 6.3V	1
C111	403 089 6800	TA-SOLID 0.22U M 6.3V	1
C112	403 038 9609	ELECT 33U M 6.3V	1
C113	403 017 7503	CERAMIC 22P J 50V	1
C114	403 069 1207	CERAMIC 1000P K 50V	1
C115	403 069 1207	CERAMIC 1000P K 50V	1
C116	403 038 5908	ELECT 22U M 6.3V	1
C117	403 037 9402	ELECT 100U M 4V	1
C118	403 001 2903	CERAMIC 0.1U M 16V	1
C119	403 039 0605	ELECT 330U M 6.3V	1
C120	403 039 0605	ELECT 330U M 6.3V	1
C121	403 001 2903	CERAMIC 0.1U M 16V	1
C122	403 038 7209	ELECT 220U M 6.3V	1
C123	403 003 6701	CERAMIC 0.033U K 25V	1
C124	403 041 5902	ELECT 470U M 10V	1
C125	403 069 0705	CERAMIC 1000P K 50V	1
C501	403 039 0605	ELECT 330U M 6.3V	1
C502	403 042 9008	ELECT 22U M 16V	1
C503	403 050 1209	ELECT 2.2U M 50V	1
C504	403 050 1209	ELECT 2.2U M 50V	1
R1	401 029 4503	CARBON 180 JA 1/8W	1
R2	401 028 9806	CARBON 15 JA 1/8W	1
R3	401 028 4702	CARBON 1M JA 1/8W	1
R4	401 030 8705	CARBON 330 JA 1/8W	1
R5	401 028 2609	CARBON 100 JA 1/8W	1
R6	401 028 6607	CARBON 120 JA 1/8W	1
R7	401 028 3200	CARBON 1K JA 1/8W	1
R8	401 030 9207	CARBON 3.3K JA 1/8W	1
R9	401 028 7604	CARBON 12K JA 1/8W	1
R10	401 029 9102	CARBON 22 JA 1/8W	1
R11	401 028 3200	CARBON 1K JA 1/8W	1
R101	401 031 2405	CARBON 3.9K JA 1/8W	1
R102	401 032 4606	CARBON 6.8K JA 1/8W	1
R103	401 030 0204	CARBON 2.2K JA 1/8W	1
R104	401 032 4606	CARBON 6.8K JA 1/8W	1
R105	401 031 7202	CARBON 47K JA 1/8W	1
R106	401 031 5505	CARBON 47 JA 1/8W	1
R107	401 029 8501	CARBON 20K JA 1/8W	1
R108	401 030 9702	CARBON 33K JA 1/8W	1
R109	401 028 7604	CARBON 12K JA 1/8W	1
R110	401 028 3705	CARBON 10K JA 1/8W	1
R111	401 031 2801	CARBON 39K JA 1/8W	1
R112	401 030 9702	CARBON 33K JA 1/8W	1
R113	401 032 4002	CARBON 680 JA 1/8W	1
R114	401 028 4702	CARBON 1M JA 1/8W	1
R115	401 031 7202	CARBON 47K JA 1/8W	1
R116	401 032 0103	CARBON 560 JA 1/8W	1
R117	401 028 9806	CARBON 15 JA 1/8W	1
R118	401 029 4503	CARBON 180 JA 1/8W	1
R119	401 031 9602	CARBON 56 JA 1/8W	1
R120	401 031 5505	CARBON 47 JA 1/8W	1
R121	401 032 0103	CARBON 560 JA 1/8W	1
R122	401 031 1903	CARBON 390 JA 1/8W	1
R501	4-2219-71550	LT Resistor 1.5kΩ J	1
R502	401 029 3100	CARBON 1.6K JA 1/8W	1
R503	401 028 9103	CARBON 1.3K JA 1/8W	1
R504	401 030 7203	CARBON 300 JA 1/8W	1
R505	401 031 4805	CARBON 4.3K JA 1/8W	1
R506	401 032 0608	CARBON 5.6K JA 1/8W	1
R507	401 033 0706	CARBON 9.1K JA 1/8W	1

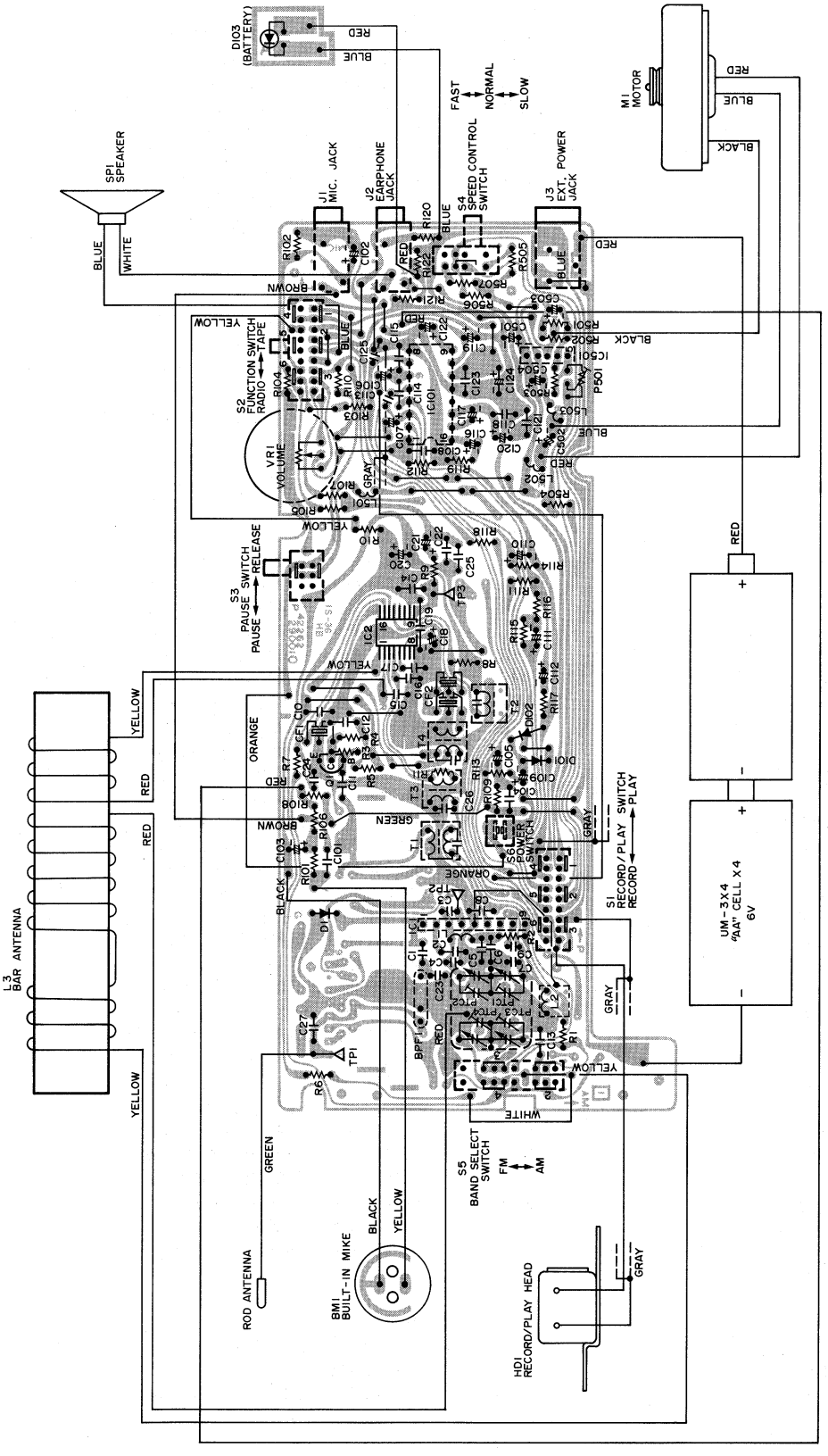
LED P.C.B. ASSY

PCB2	141-0-1939-19390	LED P.C.B. Assy	1
	4-2262-29010	PCB, LED	1
D103	407 026 4003	LED SLP-114B (Battery)	1

NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

P.C.BOARD & WIRING DIAGRAM



IC501

	1	2	3	4	5
Playback	5.9	3.1	0	4.5	4.0

IC101

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Playback	0	0	2.5	2.5	4.3	2.5	0	0	2.5	5.1	6.0	0	0	3.1	5.7	0.5

Q1

	B	C	E
AM	0	0	0
FM	0.7	5.3	0

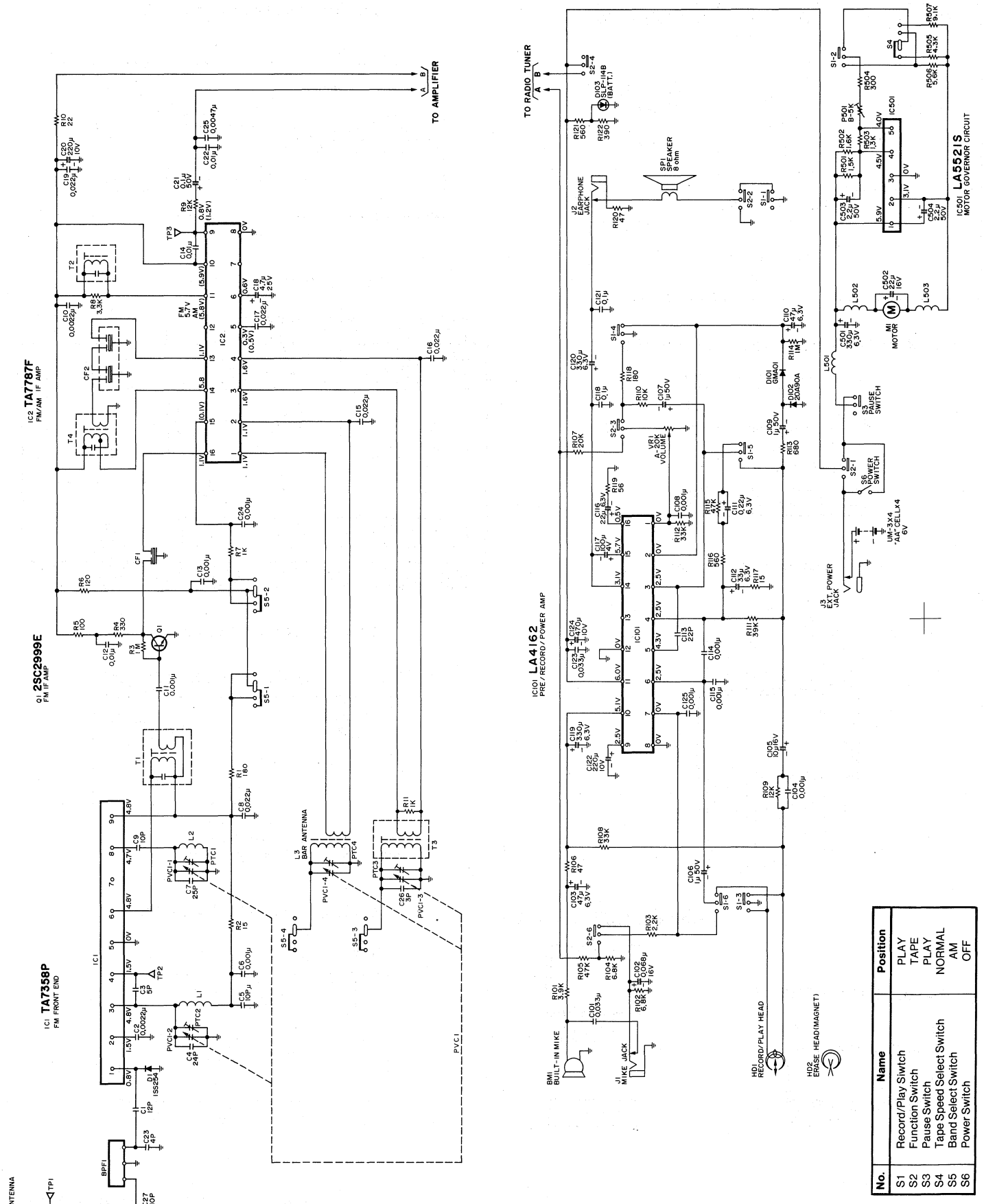
IC1

	1	2	3	4	5	6	7	8	9
AM	0	0	0	0	0	0	–	0	0
FM	0.8	1.5	4.8	1.5	0	4.7	–	4.7	4.8

IC2

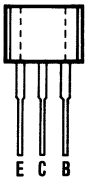
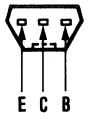
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AM	1.1	1.1	1.6	1.6	0.5	0.6	–	0	1.2	5.9	5.8	–	1.1	5.8	0.1	1.1
FM	1.1	1.1	1.6	1.6	0.3	0.5	–	0	0.8	5.7	5.7	–	1.1	5.7	4.8	1.1

SCHEMATIC DIAGRAM

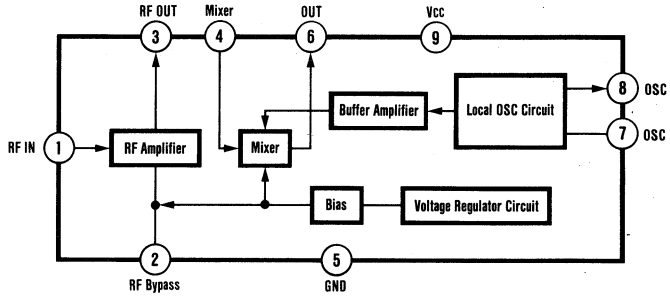


No.	Name	Position
S1	Record/Play Siwtch	PLAY
S2	Function Switch	TAPE
S3	Pause Switch	PLAY
S4	Tape Speed Select Switch	NORMAL
S5	Band Select Switch	AM
S6	Power Switch	OFF

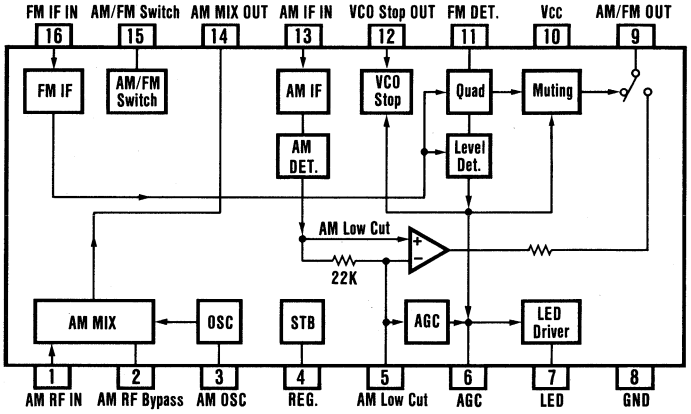
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SC2999E		
TERMINAL NAME		
B → BASE C → COLLECTOR E → EMITTER		

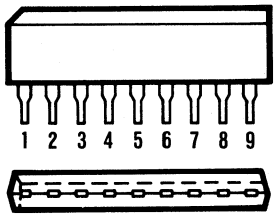
TA7358P BLOCK DIAGRAM



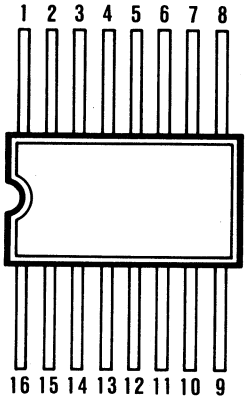
TA7787F BLOCK DIAGRAM



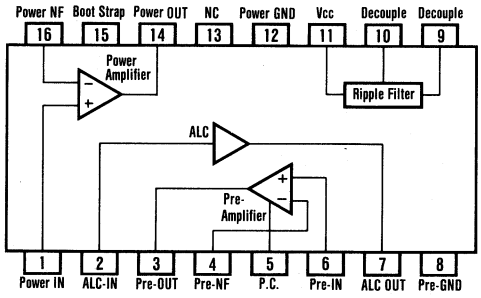
TA7358P FRONT/BOTTOM VIEWS



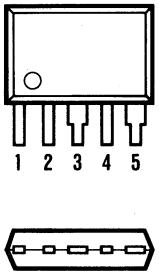
TA7787F BOTTOM VIEW



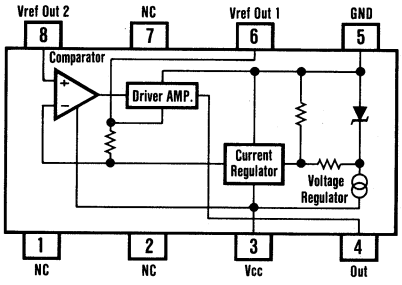
LA4162 BLOCK DIAGRAM



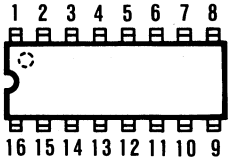
LA5521S BOTTOM VIEW



LA5521S BLOCK DIAGRAM



LA4162 BOTTOM VIEW



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